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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,899	10/02/2003	Joseph Consolini	6601P033	2351
<div>8791                      7590                      09/17/2007 BLAKELY SOKOLOFF TAYLOR &amp; ZAFMAN 1279 OAKMEAD PARKWAY SUNNYVALE, CA 94085-4040</div>				
			<div>EXAMINER LAMB, BRENDA A</div>	
			<div>ART UNIT 1734</div>	<div>PAPER NUMBER</div>
			<div>MAIL DATE 09/17/2007</div>	<div>DELIVERY MODE PAPER</div>

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/678,899	<b>Applicant(s)</b> CONSOLINI ET AL.	
	<b>Examiner</b> Brenda A. Lamb	<b>Art Unit</b> 1734	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 June 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 8 and 28-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 1-5, 8 and 28-37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                            |                                                                                         |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5,8 and 35-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

When one employs means plus function language in a claim such as a solvent vapor supply means to provide a solvent-rich environment within the recovery drain pipe as set forth in claim 5 then applicant must set forth in the specification adequate disclosure showings what is meant by that language. If applicant fails to set forth an adequate disclosure, then applicant has failed to particularly point out and distinctly claims the invention required by the second paragraph of section 112. See in re Donaldson Co. 16 F.3d 1189,1195 29 USPQ2d 1845,1850 (FED. CIR.1994). The term "the recovery drainpipe" at line 2 of claim 5 lacks proper antecedent basis. Claim 35 is confusing since it is unclear how the perimeter drain comprised of a concaved conduit for reducing the surface area contacting the photoresist being recovered relates to the additional perimeter drains. Claim 8 is confusing since it is unclear how the perimeter drain comprised of a concaved conduit for reducing the surface area contacting the photoresist being recovered as set forth in claim 1 relates to the additional perimeter drains set forth in the instant claim.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1,8,28-30 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi et al 2002/0112662 in view of Applicant's Admitted Prior Art Teaching (see Figure 1, weeping seal 150 and paragraph 0004-0006 of the specification).

Yamauchi et al disclose a system comprising the following elements: at least one nozzle as disclosed at paragraph 0032 to dispense a first liquid (a photoresist); a bowl (11) having an interior region and an interior surface; a wafer platform and spindle (see paragraph 0032) disposed within the interior region of the bowl, wherein the wafer spindle coupled to the wafer platform to spin the wafer platform to propel an excess amount of the first liquid deposited upon a wafer placed upon the wafer platform to the interior surface of the bowl; a first liquid (photoresist) recovery container or cup which includes a separate waste fluid tank as disclosed at paragraph 0036; a first perimeter

drain (area 15, 19) formed within the bowl such that the excess amount of the first liquid (a photoresist) is propelled from the wafer proceeds through the perimeter drain to the recovery container wherein the perimeter drain is comprised of a concaved conduit or a conduit with a inner surface defining a hollow, curved surface; a vertically disposed waste drain (i.e., area 16), and a second perimeter drain (defined by inner walls of second cup 12) is formed about the bowl to recover a second fluid (a diluted photoresist). Yamauchi et al second liquid recovery container or cup (20) separately collects a different type of liquid (diluted photoresist) from that collected by the first liquid recovery container or cup as disclosed at paragraph 0036. Yamauchi et al fails to teach a weeping seal to permit a wash solvent. However, it would have been obvious to modify the Yamauchi et al apparatus by providing a weeping seal to permit a wash solvent to wash the excess amount of photoresist such as taught by Applicant's Admitted Prior Art Teaching (see Figure 1) for the taught advantage of cleaning at least a portion of the inner surface of bowl. Thus claims 1, 8, 30 and 35 are obvious over the above cited references. With respect to claim 36, Yamauchi et al teaches at paragraph 0033 the chuck and evidently the shaft is adjustable. With respect to claim 28, Yamauchi et al weeping seal is capable of applying a wash solvent within the scope of the claim. Note it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex parte Masham, 2 USPQ 2d 1647 (1987). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464,

1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). With respect to claim 2, Yamauchi et al teaches at paragraph 0036 the recovery container is coupled to the bowl via a recovery drainpipe or hose. With respect to claim 34, it would have been an obvious matter of design choice to provide the Yamauchi perimeter drain with a shape within the scope of the claim since such a modification would have involved a mere change in a shape of a component absent a clear showing of unexpected results. (see *In re Dailey*, 149 USPQ 47). With respect to claim 29, Yamauchi et al shows that the walls of the perimeter drain are angled or curved to facilitate flow of the photoresist to a recovery drain.

Claims 4 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi et al 2002/0112662 in view of Applicant's Admitted Prior Art Teaching (see Figure 1, weeping seal 150 and paragraph 0004-0006 of the specification) and Yamasaka 5,997,653.

Yamauchi et al and Applicant's Admitted Prior Art Teaching (see Figure 1) are applied for the reasons noted above but is silent concerning the bowl being adjustable relative to the wafer platform. However, it was known in the art, at the time the invention was made, to provide an adjustable/movable bowl relative to a wafer platform to facilitate cleaning/rinsing of the wafer as evidenced by Yamasaka (col. 5, lines 64 to col. 6, lines 1-10 and col. 7, lines 19-29). Therefore, it would have been obvious to one of ordinary skill in the art to incorporate an adjustable bowl such as taught by Yamasaka in the Yamauchi et al system in order to facilitate cleaning/rinsing of a treated wafer. With respect to claim 4, it would have been obvious given the modifications of the Yamauchi et al as discussed above that its bowl is capable of being adjusted such that the

perimeter drain is formed level with a wafer rotation within the interior surface of the bowl via the Yamasaka height adjustment means and obvious to do so to facilitate catching excess spun-off coating.

Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Claims 1,8,28,30 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi et al 2002/0112662 in view of Applicant's Admitted Prior Art Teaching (see Figure 1, weeping seal 150 and paragraph 0004-0006 of the specification) and Curtiss et al.

Yamauchi et al and Applicant's Admitted Prior Art Teaching (see Figure 1) are applied for the reasons noted above but is silent concerning a filtering apparatus to remove particles from the recovered resist and a treating apparatus to treat the recovered resist to permit its use. However, it would have been obvious given the modifications of the Yamauchi et al as discussed above to provide a treating apparatus such as taught by Curtiss et al to treat the recovered resist to permit its use which includes a viscosity monitoring system and a filter for the treating photoresist for the obvious cost advantage of recycling.

Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Claims 1,8,28,30 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi et al 2002/0112662 in view of Applicant's Admitted Prior Art Teaching (see Figure 1, weeping seal 150 and paragraph 0004-0006 of the specification) and Kimura et al 5,711,809.

Yamauchi et al and Applicant's Admitted Prior Art Teaching (see Figure 1) are applied for the reasons noted above but is silent concerning a solvent vapor supply means coupled to the recovery drainpipe. However, it would have been obvious given the modifications of the Yamauchi et al as discussed above to provide a solvent vapor supply means coupled to the recovery drainpipe such as taught by Kimura et al for the taught advantage of preventing solidification of the photoresist within the drain pipes (see Figure 4 of Kimura et al).

Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Claims 1,8,28,30 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi et al 2002/0112662 in view of Applicant's Admitted Prior Art Teaching (see Figure 1, weeping seal 150 and paragraph 0004-0006 of the specification) and Chiu et al 5,711,809.

Yamauchi et al and Applicant's Admitted Prior Art Teaching (see Figure 1) are applied for the reasons noted above but is silent concerning a recovery drainpipe block. However, it would have been prima facie obvious given the modifications of the Yamauchi et al as discussed above to provide a recovery drainpipe block which is capable of being positioned in front of the recovery drainpipe since Chiu et al teaches using a block which includes lip 214 is positioned in front of the recovery pipe such that that it blocks flow of coating into a collecting means for collecting coating therein.

Claims 37 and 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Claims 1,8,28,30 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi et al 2002/0112662 in view of Applicant's Admitted Prior



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Art Teaching (see Figure 1, weeping seal 150 and paragraph 0004-0006 of the specification) and Nakamori et al.

Yamauchi et al and Applicant's Admitted Prior Art Teaching (see Figure 1) are applied for the reasons noted above but is silent concerning a recovery drainpipe block or the position is adjustable relative to the wafer platform. With respect to claim 37, it would have been obvious to one of ordinary skill in the art to incorporate an adjustable bowl such as taught by Nakamori et al in the Yamauchi et al system in order to facilitate cleaning/rinsing of a treated wafer. Further, with respect to claim 4, it would have been prima facie obvious given the modifications of the Yamauchi et al as discussed above to provide an integral block on the drainpipe, positioned in front of the recovery drainpipe such that when the bowl is lowered onto the spindle and pedestal assembly, coating is blocked from flowing into a collecting means such as taught by Nakamori et al for the taught advantage of controlling the environment within the spin coater during the spin coating step (see block element 41a as shown in Figures 2-3. With respect to claim 4, it would have been obvious given the modifications of the Yamauchi et al as discussed above that its bowl is capable of being adjusted such that the perimeter drain is formed level with a wafer rotation within the interior surface of the bowl via the Nakamori et al height adjustment means and obvious to do so to facilitate catching excess spun-off coating.

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brenda A. Lamb whose telephone number is (571) 272-1231. The examiner can normally be reached on Monday-Tuesday and Thursday-Friday. The examiner can also be reached on alternate Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip Tucker, can be reached on (571) 272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Brenda A Lamb  
Examiner  
Art Unit 1734